

In the Claims:

Please cancel claims 31-35. This listing of claims will replace all prior versions and listings of claims in the application:

1.-21. (Canceled)

22. (Previously Presented) A mechanism to adjustably apply a counter-balance force in response to a load comprising:

a spring;

a pulley including an input groove and an output groove;

an input cable having a first end coupled to the input groove and a second end connected with the spring;

an output cable having a first end coupled to the output groove and a second end extending from the first end;

wherein the pulley is adapted to transfer a counter-balance force to the second end of the output cable; and

an adjustable end plug connected between the input cable and the spring;

wherein the adjustable end plug includes a helical groove within which a coil of the spring is receivable; and

wherein the adjustable end plug can be threaded along the coil of the spring to adjust the counter-balance force applied by the spring in response to the load.

23. (Canceled)

24. (Previously Presented) A mechanism to adjustably apply a counter-balance force in response to a load comprising:

a spring having a plurality of coils;

an end plug screwed onto one or more of the coils so that the one or more coils is received in a helical groove of the end plug, wherein a spring constant of the spring is adjustable by selectively advancing or retreating the end plug along the coils of the spring;

a dual pulley rotatable at a shaft, the dual pulley including:

an input groove formed in a first surface; and

- an output groove formed in a second surface;
wherein one or both of the first surface and the second surface has a radius that spirals outwardly from the shaft;
an output cable connected with the output groove; and
an input cable connected between the input groove and the end plug;
wherein the spring applies a counter-balance force to the input cable, which counter-balance force is transmitted to the output cable by the dual pulley.
25. (Previously Presented) The mechanical mechanism of claim 24, wherein:
the dual pulley further comprises an input pulley fixedly connected to an output pulley by a spline hub; and
the input pulley includes the input groove and the output pulley includes the output groove.
26. (Previously Presented) The mechanism of claim 24, wherein:
both of said first surface and said second surface have a radius that spirals outwardly from the shaft; and
said first surface spirals outwardly in a direction that is opposite to a direction that said second surface spirals outwardly.
27. (Previously Presented) The mechanism of claim 24, wherein:
the dual pulley is a dual helical pulley having an input groove that spirals outwardly in a counter-clockwise manner and an output groove that spirals outwardly in a clockwise manner;
28. (Previously Presented) The mechanical mechanism of claim 24 wherein the radius of one or both of the first surface and second surface is defined by a torque profile.
29. (Previously Presented) The mechanical mechanism of claim 28 wherein the torque profile is parabolic.
- 30-35. (Canceled)